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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,308	12/31/2003	Michael O'Connor	P16604	9709
28062	7590	06/28/2005	EXAMINER	
BUCKLEY, MASCHOFF, TALWALKAR LLC 5 ELM STREET NEW CANAAN, CT 06840			MITCHELL, JAMES M	
			ART UNIT	PAPER NUMBER

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/750,308

Applicant(s)

O'CONNOR ET AL.

Examiner

James M. Mitchell

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 and 16-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-15, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                     | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ / | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This office action is in response to application filed December 31, 2003.

#### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-20, 27, 28, drawn to device, classified in class 257, subclass 710.
- II. Claims 21-26, drawn to method, classified in class 438, subclass 106.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case that the process as claimed can be used to make other and materially different product, a product including an interposer wherein the base and lid are not of similar CTE.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

If applicant elects group I, this application contains claims directed to the following patentably distinct species of the claimed invention: the species of Figure 3A, the species 5A and the species of Figure 8.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently no claim is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Nandu Talwakar on June 8, 2005 a provisional election was made without traverse to prosecute the invention of Group I, the Species of Figure 3A claims 1-6, 10-15, 27 and 28. Affirmation of this election must

be made by applicant in replying to this Office action. Claims 7-9,16-26 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. (U.S. 2002/0004251) in combination with Banks (U.S. 5,919,329)

Roberts (Fig. 3- 6,16a, 24) discloses:

- (cl.1) a device comprising: a microdisplay integrated circuit (IC) ("LED"; 602); a substantially transparent protective cover (401) coupled to the microdisplay IC; and a base (603) coupled to the microdisplay IC;
- (cl.2) wherein the imaging elements are disposed between the cover and the semiconductor substrate( 501), and wherein the semiconductor substrate is disposed between the base (603) and the imaging elements (502,601,602);
- (cl.3) and the protective cover is composed of a material of a first thickness, and the base is composed of a material of substantially the first thickness (Fig. 24);
- (cl. 4, 5, 11) a chip carrier (204) defining a recess, the base mounted within the recess (Fig. 3, 16a);

(cl. 6, 12) a foot (i.e. bottom width of area recess) of the recess having a first thickness, the first thickness substantially smaller than a thickness of the combined microdisplay IC, the cover, and the base (i.e. recess is within base);  
(cl. 10, 13) a heat sink (2404) coupled to the chip carrier;  
(cl. 14). A device according to Claim 13, wherein the heat sink is coupled (i.e. mechanically attached to base that recess is in) to a foot of the recess.

Roberts does not appear to explicitly disclose that the thermal expansion characteristics of the base are substantially similar to thermal expansion characteristics of the protective cover.

Banks discloses the use of the thermal expansion characteristics of a base and lid/ cover being substantially similar.

It would have been obvious to one of ordinary skill in the art to form the protective cover of Roberts with a CTE similar to that of its base in order to offset bending as taught by Banks (Col. 27, Lines 60-64; Col. 30, lines 17-24).

Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. (U.S. 2002/0004251) in combination with Banks (U.S. 5,919,329) and Rekow et al. (U.S. 6,494,371).

Roberts (Fig. 3- 6, 16a, 24) discloses:

(cl.27) a device comprising: a microdisplay integrated circuit (IC) ("LED"; 602); a substantially transparent protective cover (401) coupled to the microdisplay IC; and a base (501) coupled to the microdisplay IC;

(cl. 28) and chip carrier (204) defining a recess, the base mounted within the recess (Fig. 3, 16a.

Roberts does not appear to explicitly disclose that the thermal expansion characteristics of the base are substantially similar to thermal expansion characteristics of the protective cover or use of a ultra high pressure light source with a condenser lens and projector lens.

Banks discloses the use of the thermal expansion characteristics of a base and lid/ cover being substantially similar.

It would have been obvious to one of ordinary skill in the art to form the protective cover of Roberts with a CTE similar to that of its base in order to offset bending as taught by Banks (Col. 27, Lines 60-64; Col. 30, lines 17-24).

The modified structure of Roberts and Banks fail to show the use of a high pressure (i.e. array) with conductor and projector lens.

Rekow (Fig. 1B) shows the use of an array with projectors (40) and condensers lens (42).

It would have been obvious to one of ordinary skill in the art to incorporate an projector and condenser lens with the modified microdisplays of Roberts and Banks in order to form an illumination system as taught by Rekow (Abstract).

### ***Conclusion***

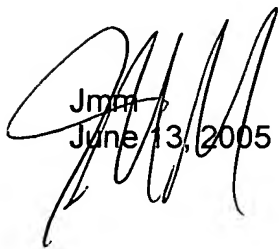
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art discloses in: Zhen (U.S. 2004/023413) the use of

lens formed either of a glass or ceramic material; Iizuka (U.S. 4,905,021), Haskett et al. (U.S. 6,894,853), Roberts'312 (U.S. 2002/0149312) and Choi (U.S. 6,720,206) the use of a microdisplay coupled between a cover and carrier with a sink attached to carrier.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jmm  
June 13, 2005

